

VOORTHUYSENIELLA VENTRESSI, NEW SPECIES
(MICROPROBLEMATICA) FROM THE BASAL
PLEISTOCENE OF LOUISIANA

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Abstract.—A new species of *Voorthuyseniella* Szczechura, *V. ventressi*, (1969), is described from subsurface Pleistocene strata on the Louisiana continental shelf. Observations are made on the morphologic and paleobathymetric significance of the taxon.

A form of *Voorthuyseniella* Szczechura, 1969, with a distinctly compressed test has been described, in open nomenclature, from the subsurface Pliocene of the Texas continental shelf (Haman, 1977). The recovery of 2 additional specimens of the taxon in 2 wellbore samples from early Pleistocene strata on the Louisiana continental shelf (West Delta area) provides additional information which allows a more definitive taxonomic diagnosis that provides taxonomic stability for this Plio-Pleistocene organism.

Other occurrences of *Voorthuyseniella* in the Neogene-Recent stratigraphic interval of the Gulf of Mexico province have been documented by Keij, 1970 (offshore Texas, Recent); Haman and Kohl, 1976 (offshore Texas, Pleistocene); Haman, 1978 (offshore Texas and Louisiana, Pleistocene); Haman, in press (offshore Louisiana mudlumps, late Quaternary).

The standardized test orientation, morphologic and measurement terminology are based on Haman (1978:190).

Voorthuyseniella ventressi, new species

Fig. 1

Description.—Test calcareous, unilocular, as high as wide, tapering from base of camera to porta, camera cone-shaped in side view (Fig. 1b,g). Camera extends laterally to either side of a median line between the lateral apertures. Camera ovate when viewed from above (Fig. 1d) and below (Fig. 1e). The ovate, compressed camera is situated transverse to the tubus. Camera is widest (0.37 mm) just below the middle. Tubus moderately flat, slightly raised in the direction of lateral aperture 'A' (Fig. 1b). Tubus slightly more narrow at the middle, in the area of the tubus pore, compared to the ends at the lateral apertures (Fig. 1e). A subparallel-sided furrow is present on the tubus and extends from the tubus pore to either side ending just beyond the camera limits (Fig. 1e). Porta subcircular to elliptical in shape (0.035 mm × 0.025 mm) situated in a slightly bevelled depression and surrounded

by an elliptical abraded area ($0.09\text{ mm} \times 0.07\text{ mm}$) (Fig. 1d). Porta orientated transverse to the lateral apertures and in line with the greatest camera width. Porta is eccentric, not located at camera top, but is slightly offset and directed towards lateral aperture 'A' (Fig. 1b). Tubus pore subcircular ($0.020\text{ mm} \times 0.015\text{ mm}$) situated between the lateral apertures and in line with them. Tubus pore does not extend beyond the tubus furrow width (Fig. 1e). Lateral aperture 'A' subcircular to ovate ($0.045\text{ mm} \times 0.035\text{ mm}$) (Fig. 1a) with a poorly defined flap-like structure over it (Fig. 1d). A rim (0.018 mm in width) surrounds the aperture. Lateral aperture 'B' subcircular, 0.045 mm diameter (Fig. 1c) surrounded by a rim 0.015 mm in width. No septa are evident. Test surface appears striate and punctate under light microscope examination but under SEM examination the striae are shown to result from differential camera solution, and punctae are elongate depressions on test wall, not true punctae. The shallow elongate depressions are arranged concentrically around the porta and are restricted to the camera. Solution effects are evident over both camera and tubus but appear to be more severe on tubus.

Test dimensions.—Maximum length 0.47 mm , maximum width 0.37 mm , height 0.36 mm .

Locality.—Well cutting sample, West Delta area, offshore Louisiana.

Stratigraphic level.—Early Pleistocene, Zone N.22 of Blow (1969).

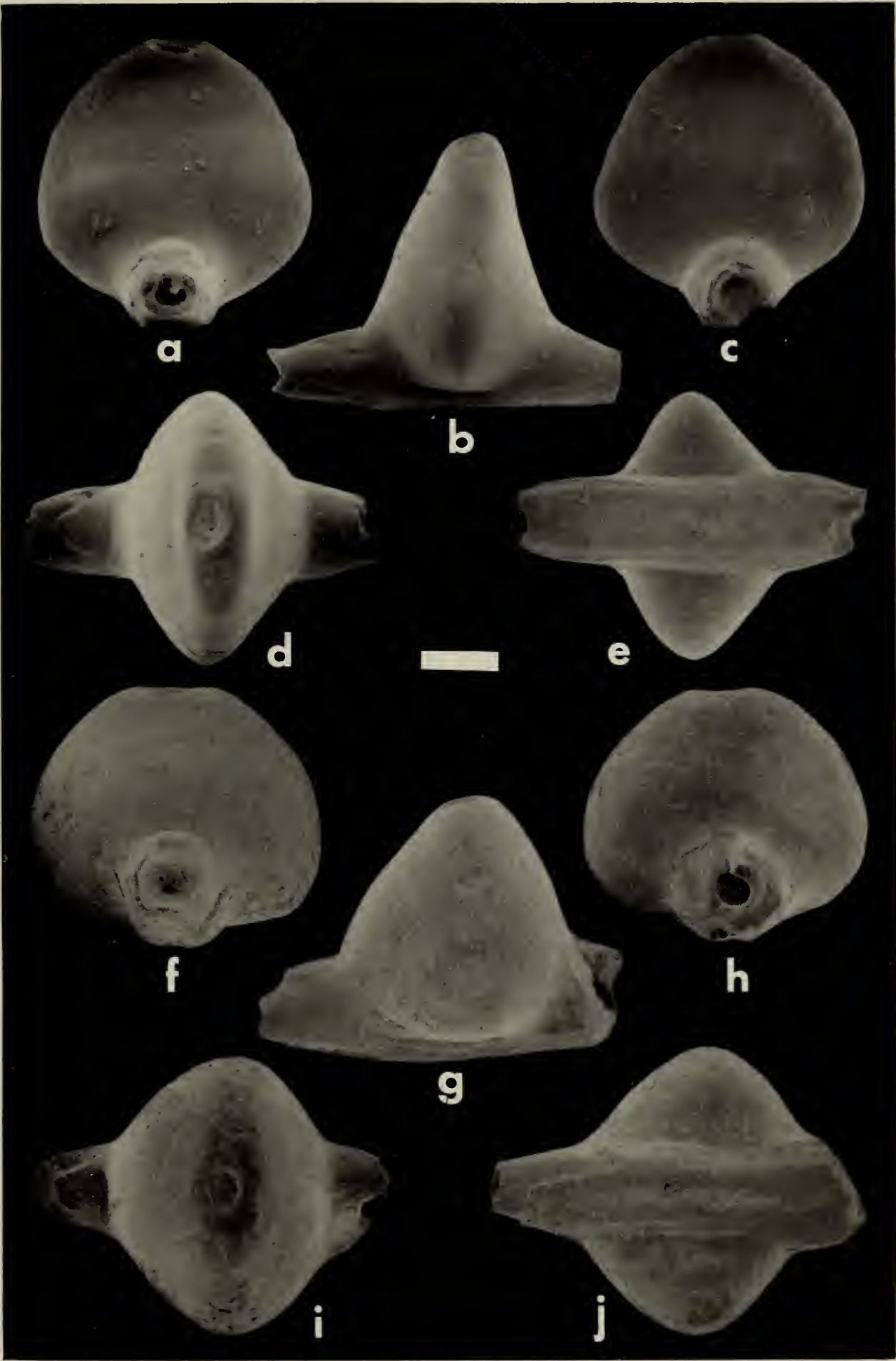
Repository.—In author's collection pending final disposition.

Etymology.—The new species is named in honor of W.P.S. Ventress, Senior Staff Paleontologist, Chevron U.S.A., New Orleans, in recognition of his many years of providing guidance to numerous paleontologists in Gulf Coast biostratigraphy.

Remarks.—The specimens ascribed to this species (holotype, paratype, plus the form previously described in open nomenclature) exhibit variation in their morphology, which is believed to be the result of specific variation and possibly related to the growth process and/or solution effects. The camera ranges in shape from a narrow elongate cone (Fig. 1b) to a shorter, more robust type (Fig. 1g). The form previously described (Haman, 1977) appears to be an intermediate type. Cameral compression ranges from severe (Fig. 1d, e) to more moderate (Fig. 1i, j). Again the form previously detailed appears to be intermediate. The porta ranges in shape from distinctly elongate (Haman, 1977, Pl. 1, fig. 3; Pl. 2, fig. 3) to less elongate

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Fig. 1. *Voorthuyseniella ventressi*. a–e, Holotype; f–j, Paratype: a, f, Lateral aperture 'A'; b, g, Side view (lateral aperture 'A' at left); c, h, Lateral aperture 'B'; d, i, View to porta and supra apertural 'flap' (lateral aperture 'A' at left); e, j, View to tubus, tubus pore and tubus furrow (lateral aperture 'A' at left). Bar = $100\text{ }\mu\text{m}$.



(Fig. 1d) to subcircular (Fig. 1i). The porta shape and size in these specimens appear directly related to the degree of test dissolution around the feature. It appears that the shallow pits described earlier undergo selective dissolution with a collapse type of feature being subsequently developed around the porta, thus changing the shape and size of the porta, as suggested by Haman (1977, Pl. 2, fig. 3). The holotype and paratype exhibit different degrees of solution. The holotype is well preserved with little evidence of differential solution, while the reverse is the case with the paratype. The shape of the small tubus pore may also be affected by a similar phenomenon, giving rise to slight shape and size variation. The size ranges of various morphologic features are noted below:

	Holotype Fig. 1a-3	Paratype Fig. 1f-g	Haman 1977 Specimen Pl. 1, Figs. 1-3, Pl. 2, Figs. 1-3
	(entire)	(partly broken)	(broken)
Max. length	0.47 mm	0.47 mm	0.46 mm
Max. height	0.36 mm	0.40 mm	0.43 mm
Max. width	0.37 mm	0.38 mm	0.44 mm
Porta	0.04 × 0.03 mm	0.50 × 0.03 mm	0.06 × 0.03 mm

The specimens described herein exhibit no definite affinity to any previously described forms of *Voorthuyseniella*. It should be noted that due to the fragmented nature of the test, lateral apertures ‘A’ and ‘B’ were reversed in the description of the form previously detailed (Haman, 1977).

All the previously documented Pleistocene-Recent occurrences of *Voorthuyseniella* in the Gulf of Mexico province listed earlier, comprised forms of this taxon that possess a globular or elongate-globular (hemispherical) test. This type of morphology is typically associated with a shallow water (<100 fathoms) type of environment (see Keij, 1970; Hantzschel, 1975). One occurrence of a globular form in paleobathymetrically deeper waters (>100 fathoms) was attributed to downslope displacement of the organism (Haman, 1978:190).

The *Voorthuyseniella* specimen described from the Texas Pliocene was suggested to have developed such a morphology (i.e. flattened camera) in response to a paleobathymetric parameter (Haman, 1977:135). The philosophy of this hypothesis has been detailed (ibid) and need not be repeated here. The foraminiferid assemblage associated with that occurrence unquestionably indicated a paleobathymetry of 250–500 fathoms (Haman, 1977:135).

The Pleistocene forms described herein do not, by means of foraminiferid association, attain middle bathyal depths as did the Pliocene form, but a paleobathymetry in at least the upper bathyal range is indicated. The fora-

miniferid assemblage in the sample containing the holotype was composed of 22 benthic species with in excess of 130 individuals, and 8 planktic species with over 100 individuals. The sample containing the paratype possessed a richer foraminiferid assemblage composed of 38 benthic and 9 planktic species, both groups with an excess of 300 individuals. These assemblages by analogy to the data of Phleger (1951); Parker (1954); Murray (1973); LeRoy and Levinson (1974); and LeRoy and Hodgkinson (1975) indicate an upper bathyal depth range (>100 – <250 fathoms). The assemblage from the latter sample suggests an environment in the lower reaches of the upper bathyal range. It is believed that these data support the hypothesis that the forms of *Voorthuyseniella* with a compressed test are more indicative of deeper bathymetries than the more globular test types of this genus.

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